

THE OHIO JOURNAL OF SCIENCE

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No. 1

REPORT OF THE THIRTY-FIRST ANNUAL MEETING OF THE OHIO ACADEMY OF SCIENCE

E. L. RICE

Secretary

The Thirty-first Annual Meeting of the Ohio Academy of Science was held at Western Reserve University and Case School of Applied Science, Cleveland, Ohio, March 25 and 26, 1921, under the Presidency of Mr. W. H. Alexander. Fifty-nine members were registered as in attendance; forty-seven new members were elected.

In accordance with the practice begun in 1918, but of which discontinuance has since been threatened, a geological excursion was organized by Professor J. E. Hyde, Vice-President for Geology, 1921-22, for the three days, May 28, 29 and 30. The party was under the guidance of Drs. August Foerste and W. H. Shideler. The itinerary (Wilmington, Clarksville, Fort Ancient, Oregonia, Dayton) was planned for the study of the Richmond formations of southwestern Ohio. Like other Academy functions, the excursion was open to non-members as well as members; fifteen geologists were present.

GENERAL PROGRAM.

FRIDAY, MARCH 25.

- 9:30 A. M.—Business Meeting.
- 11:00 A. M.—Reading of Papers in General Session.
- 12:30 P. M.—Luncheon.
- 2:00 P. M.—Demonstrations.
- 2:30 P. M.—Reading of Papers in General Session.
- 3:30 P. M.—Lecture by Dr. Henry H. Goddard, Bureau of Juvenile Research, Columbus, on "Scientific Work at the Bureau of Juvenile Research."
- 4:30 P. M.—Reading of Papers in General Session.
- 6:30 P. M.—Dinner.

- 8:00 P. M.—Address by the President of the Academy, Mr. W. H. Alexander, U. S. Weather Bureau, Columbus, on "Thunder Storms: Especially Those of Ohio."
9:00 P. M.—Adjourned Business Meeting.

SATURDAY, MARCH 26.

- 9:00 A. M.—Adjourned Business Meeting.
10:00 A. M.—Lecture by Professor Charles A. Kofoed, University of California, Berkeley, California, on "Hookworm and Human Efficiency."
11:00 A. M.—Reading of Papers in Sectional Meetings.
2:00 P. M.—Demonstrations.

SATURDAY, MAY 28—MONDAY, MAY 30.

Excursion by Section for Geology.

MINUTES OF BUSINESS MEETINGS.

The first business session was called to order by President Alexander at 9:30 A. M., on Friday, March 25. Adjourned sessions were held after the presidential address on Friday evening and at 9:00 A. M. on the following day.

The appointment of the following committees for the meeting was announced by the chair:

Committee on Membership—F. C. Waite, E. L. Fullmer, J. E. Hyde.

Committee on Resolutions—C. G. Shatzer, R. C. Osburn, W. H. Bucher.

Committee on Necrology—J. E. Hyde.

The following Auditing Committee was elected by the Academy: L. B. Walton, E. L. Fullmer.

The following Nominating Committee was elected by the ballot of the Academy: F. H. Herrick, E. L. Fullmer, J. E. Carman, F. C. Waite, H. H. Young.

Report of the Secretary.

The following report by the Secretary was received and ordered filed:

March 22, 1921.

To the Ohio Academy of Science:

Much of the work of the Secretary is covered by the Report of the Executive Committee.

The following brief note from Mr. McMillin, in reply to the Secretary's notification of election as patron and fellow, will be of interest to the membership of the Academy and may well have a permanent place in the records of the Academy:

DARLINGTON, MAHWAH, N. J., July 3, 1920.

DEAR MR. RICE:

Your good letter of July 1st was received a few moments ago. I thank the Society for all the honors they have conferred upon me, and greedily accept them all.

Most sincerely yours,

EMERSON McMILLIN.

Edward L. Rice, Sec'y, Ohio Academy of Science.

There has been some additional correspondence with the National Research Council concerning the research work of the Academy.

An appeal for the students of the Department of Geography of the Hungarian University of Debreczen was received under date of December 7, and will be presented later in the meeting.

A brief report of the Thirtieth Annual Meeting was prepared for *Science*, and appeared in the issue for August 6th.

In accordance with the instructions of the Academy, the Secretary prepared the Constitution, as amended to date, for reprinting, and it appeared in the Proceedings in connection with the Report of the Annual Meeting.

A number of technical changes in the form of the membership list were necessitated by the designation of fellows and national members (i. e., Academy members who are also members of the American Association for the Advancement of Science). In this revision errors may well have crept in; the secretary will be very grateful for corrections of such mistakes in order that the next list may be made as accurate as possible.

Respectfully submitted,

EDWARD L. RICE, *Secretary*.

Report of the Treasurer for the Year 1920-'21.

The report of the Treasurer was received as follows, and referred to the Auditing Committee, whose report is appended.

Balance in Hayden-Clinton Bank, May 13, 1920, as previously reported.....	\$ 363.90
Deposits.....	1,357.90
Total.....	\$1,721.80
Less checks.....	1,206.06
Balance in bank March 17, 1921.....	\$515.74

The distribution of the funds expended is as follows:

To members of the Ohio Academy as refunds from the A. A. A. S.	\$ 46.00
To E. L. Rice, Secretarial expenses.....	12.51
To Independent Print Shop.....	53.25
To Spahr & Glenn, Printers.....	8.75
To Hiss Stamp Company.....	1.40
To James S. Hine for Ohio Journal of Science.....	500.00
To T. C. Mendenhall, for coupons from bond.....	4.15
To B. E. Livingston for A. A. A. S.....	580.00
	<hr/>
	\$1,206.06
<i>Cr.</i>	
Balance carried forward.....	\$ 363.90
Cash deposited.....	1,357.90
	<hr/>
	\$1,721.80
<i>Dr.</i>	
As itemized expenditures.....	\$1,206.06
Balance in hand.....	515.74
	<hr/>
	\$1,721.80

The Treasurer feels that the Academy is on a sound financial basis as is indicated in the report. He wishes to take this occasion to thank the members of the Ohio Academy of Science for their cordial support. There have been several cases of delays and misunderstandings in the collection of the joint dues for the American Association for the Advancement of Science and for the Academy. This is greatly to be regretted but from a careful study of the methods of payment, the Treasurer believes that the system will be practically automatic in another year. In order to avoid all trouble and inconvenience, prompt payments should be made in the early autumn when the bills are sent out. This insures prompt notification of the subscription managers of *Science* and of the OHIO JOURNAL OF SCIENCE and uninterrupted delivery of the two journals. Unless the Treasurer has the unanimous co-operation of the members in the matter of promptness, he cannot assure them of immediate attention. He is at all times glad to have reports of errors or delays and willing to do everything he can to adjust matters to the satisfaction and convenience of the members. During the year the present Treasurer has just served he has done practically all the work of billing, dunning, and corresponding unaided. This was done, not so much with the desire to save the slight cost of additional help, as in the hope that he might come to know all the details of the job and especially to straighten out accounts of members in arrears. It is to be hoped that members will take care of their arrearage sooner in the future, but this matter, in the case of those members of the Academy who are also A. A. A. S. members, will quickly adjust itself. In the itemized account of the funds the deposits are somewhat swelled because of arrearage. Because there is no adequate adjustment of this for the Ohio JOURNAL an increase to the JOURNAL was given this year.

While this increase for the JOURNAL comes at a time when it is greatly needed, it should be clear in the minds of the members that the Treasurer does not condone arrearages. A periodical journal can not subsist on alternate fat and lean years. It is desirable that its pabulum be more evenly distributed. Further the Treasurer is definitely preparing to meet the future expansion of the OHIO JOURNAL OF SCIENCE. He believes in it thoroughly and wishes to make it an adequate medium of expression for all the members. The JOURNAL ought to appeal especially to the younger members of the Academy. They need to publish articles in order to become introduced to the older scientific workers. The Treasurer feels that all the money that can be put into the JOURNAL is still not nearly enough to make it the best one of its kind in the country. By making it attractive, the JOURNAL can continue to publish some of the best articles that the members of the Academy can write.

The Treasurer further wishes to call the attention of the members to the fact that Mr. L. H. Tiffany of the Department of Botany of the Ohio State University, has been appointed subscription manager of the JOURNAL. It is his duty to see that all members who have squared accounts with the Treasurer be supplied with all numbers of the JOURNAL to which they are entitled, without further charges. He is at present attending to all cases of non-delivery of the JOURNAL that have come to his attention. All complaints in the matter of the delivery of the JOURNAL sent to Mr. Tiffany can now be cared for. It is thus to be hoped that the members of the Academy will be promptly served.

Respectfully submitted,

A. E. WALLER, *Treasurer.*

We have examined the above report and found it to be correct.

Respectfully submitted,

L. B. WALTON,

E. L. FULLMER,

Auditing Committee.

Report of the Executive Committee.

The report of the Executive Committee was received as follows and ordered filed:

March 25, 1921.

To the Ohio Academy of Science:

A meeting of the Executive Committee was held in Columbus, December 18, 1920; all members of the Committee were present.

An invitation was received from Western Reserve University and Case School of Applied Science to hold the Annual Meeting for 1921 in Cleveland. The Executive Committee voted unanimously to accept this invitation, and set the date of the meeting for April 1 and 2. The date was later changed by correspondence to March 25 and 26, in order to bring it within the spring recess of Western Reserve University.

The Secretary reported correspondence with Prof. R. C. Friesner, Chairman of the Program Committee of the Indiana Academy of Science, relative to the possibility of a joint field meeting of the two Academies this spring. The joint meeting is rendered difficult by the fact that the Indiana Academy holds a fall meeting for the presentation of papers and a field meeting in the spring, while the Constitution of the Ohio Academy restricts the Annual Meeting to March or April. A joint meeting in the spring must either debar the Ohio Academy from the opportunity for presentation of papers or eliminate the field meeting from the program of the Indiana Academy. The Executive Committee voted its general approval of a joint meeting at some future date, and instructed the Secretary to continue negotiations with the Indiana Academy. The Committee further instructed the Secretary to give notice to the Academy of a proposed amendment to the Constitution removing the present restriction as to the date of the Annual Meeting, unless such amendment shall prove to be contrary to the Charter of the Academy.

The Executive Committee recommended to the Joint Committee on the Election of Fellows that an opportunity be given this year for the nomination of fellows by the present fellows of the Academy on the lines suggested in the pending Constitutional amendment.

Professor Blake was requested to make an investigation of the desirability of an affiliation of the Academy with the Ohio Association of Technical Societies, as suggested in the Annual Meeting of 1919.

The President, Mr. Alexander, was requested to act as Chairman of the Committee on Legislation during the absence of Professor Osborn.

A second meeting was held in Cleveland on the evening of March 24, at which this report was adopted. The President, Treasurer and Secretary were present at this meeting.

Thirty-six new members have been elected during the year, subject to the ratification of the present meeting.

EDWARD L. RICE, *Secretary,*
For the Committee.

Report of the Publication Committee.

The following report of the Publication Committee was received and ordered filed:

The Annual Report of the Thirtieth Meeting (Proc. Ohio Acad. Sci., Vol. VII, Part 5, pp. 117-158) was published on January 17, 1921. It contains the Constitution and By-Laws in addition to the usual matter. Fifty reprints each of the list of members and of the Constitution were also printed. The present arrangement of printing the Secretary's report in the November issue of the OHIO JOURNAL OF SCIENCE followed soon after by the complete annual report seems satisfactory.

Respectfully submitted,
JOHN H. SCHAFFNER, *Chairman.*

Report of Library Committee.

A brief report for the Library Committee was prepared for the meeting by Mr. Reeder; but, owing to a delay in the mail, this report was not received by the secretary until after the close of the meeting. The following report has since been received for publication.

March 23, 1921.

To the Ohio Academy of Science:

The Library Committee begs leave to submit the following report:

(1) The sale of publications during the year has amounted to \$1295.

(2) The Proceedings of the 30th annual meeting of the Academy were published in the OHIO JOURNAL OF SCIENCE for November, 1920. Reprints were received late in February and copies were mailed immediately to all persons on the membership roll and to sixty-eight institutions on the exchange list.

(3) The University Library again calls to the attention of the Academy its willingness to lend to any member, through his institutional library, any publication needed in research work. The library is receiving the exchanges from the Ohio Academy and from the OHIO JOURNAL OF SCIENCE, and together with its own purchases and collections in the scientific fields, there is available a remarkable source of literature for advanced study and research. It is hoped that more use will be made of these sources by the scientific men of Ohio.

Very respectfully,

C. W. REEDER.

Report of the Trustees of the Research Fund.

The following report of the Trustees of the Research Fund was received and ordered filed. The financial portion of the report was referred to the Auditing Committee, whose report is appended.

To the Ohio Academy of Science:

The Trustees of the Research Fund submit the following report for the period from May 12, 1920, (the date on which the last report was made), to March 1, 1921.

During this period only two payments from the fund were made: To L. B. Walton, the balance of the grant made to him in 1917, for the study of fresh water organisms; to Miss Elsie Jordan, for a continuation of the work of relabeling the Harper collection of Naiades, under the direction of W. H. Beecher, to whom the grant was made.

Unexpended balances remain to the credit of A. E. Waller, for the study of Ohio vegetation, and to W. H. Bucher, for aid in the making of a geological map of the disturbed area in Adams County, Ohio.

A grant of \$150 was made on January 10, 1921, to W. J. Koster, to aid in a survey of the Orthopteran fauna of Ohio.

Correspondence is in progress which may lead to a renewal of the grant made to Paul B. Sears on June 1, 1919, and a further allotment to W. H. Bucher, for the continuation of work originally undertaken by them.

Below is a tabulated statement of receipts and expenditures during the period covered by this report. In this, it will be noted, is included a one hundred dollar Liberty Bond received from the Treasurer of the Academy to be added to the Research Fund and which is held as a more or less permanent investment along with that purchased in 1918. The accrued interest on both of these bonds is added to the active assets of the funds.

At present the amount available for allotment is \$569.96, from which it will appear that the demand for the somewhat restricted financial aid to research which this fund furnishes has not been very great during the past year.

Vouchers for all expenditures are submitted herewith, together with the Cashier's certificate of the balance in the bank on March 1, 1921.

RECEIPTS.

Cash in bank May 1, 1920, as per report of that date..	\$644.68
Interest on new Liberty Bond, May 15 and July 28, 1920	6.27
Interest on Liberty Bonds, Feb. 23, 1921.....	12.76
Check from Mr. W. Gluttin, Feb. 23, 1921.....	250.00
	<hr/> \$913.71

EXPENDITURES.

Elsie Jordan, June 19, 1920.....	\$22.50
L. B. Walton, January 7, 1921.....	20.31
	<hr/> 42.81

ASSETS.

Cash in bank, March 1, 1921.....	870.90
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Total Assets, Liberty Bonds at par.....	\$1,470.90
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LIABILITIES (UNDER GRANTS)

A. E. Waller.....	\$ 75.00
W. H. Bucher.....	75.94
W. J. Koster.....	150.00
	<hr/> \$300.94

Excess of Available Assets over Liabilities.....	\$569.96
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(Signed) T. C. MENDENHALL, *Chairman*.
HERBERT OSBORN.

We have examined the report and found it to be correct.

L. B. WALTON,
E. L. FULLMER,

March 25, 1921.

Auditing Committee.

Report of Committee on Legislation.

Professor Herbert Osborn, chairman of the Committee on Legislation, submitted the draft of a proposed bill looking to recognition and financial support of the Academy by the State. The bill, as submitted, is modeled after that establishing the State Archaeological Society. It was written by Mr. Edge, official "bill drafter" for the Assembly, in consultation with President Alexander, who acted as chairman of the Committee during Professor Osborn's absence from Ohio.

After extended discussion, the report was adopted by the Academy, with minor amendments of the bill, and the Committee was continued with instructions to carry on the campaign. President Alexander was added to the Committee, which, as now constituted, consists of the following: Herbert Osborn, chairman; W. H. Alexander, T. C. Mendenhall, M. M. Metcalf, E. L. Rice, L. B. Walton.

The Committee was instructed to draft such revision of the Constitution of the Academy as may be necessary in case the bill is passed by the Assembly, this action to be interpreted as notice of amendment of the Constitution and as enabling the Academy to take final action at the next annual meeting.

The proposed bill, including the amendments voted by the Academy, follows:

A BILL

Relative to State recognition of the Ohio Academy of Science.

Be it Enacted by the General Assembly of the State of Ohio:

SECTION 1. The Ohio Academy of Science, a corporation not for profit, incorporated under the laws of Ohio, March 12, 1892, shall be under the control of a board of trustees consisting of fifteen members to serve without salary or per diem. Six of the members of the board shall be appointed by the governor with the advice and consent of the Senate, two to serve for two years, two to serve for four years and two to serve for six years, and until their successors are appointed and qualified, and thereafter two members shall be appointed every two years to serve for a term of six years. The remaining nine members of the board shall be elected by the members of the Academy.

SECTION 2. On and after the passage of this act, the Ohio Academy of Science shall constitute an official source of advice and information on all scientific questions within its field submitted to it by any state department or officer thereof. The services of the Academy shall be available to the state or any of its officers in any matter within its field in which the consideration of scientific facts or policies may be involved, and the officers of the state may call upon the Academy of Science, through its properly elected officers or committees appointed by its officers, for such consultation and advice as may be of service to them in their duties. The members of such committees shall receive no compensation for their services, except that all traveling, clerical and other necessary expenses shall be

paid. No member of the Ohio Academy of Science, while serving on any such committee, shall be eligible for expert service under advice from said committee for which compensation from the state is received.

SECTION 3. One copy of the "Proceedings of the Academy" shall be distributed to each public library and museum, university, college, normal schools, and first grade high school in the state, and one copy of each number of its official organ, "The Ohio Journal of Science," shall be distributed to each university and college in the state. All exchanges received shall be kept available to the citizens of the state through the library of The Ohio State University, or such other channel as may be determined.

SECTION 4. The secretary of the Ohio Academy of Science shall be a person well suited by training and experience to perform his duties and may be paid from state funds.

SECTION 5. The legislature shall make such appropriations from year to year as may be necessary to print the official publications of said Academy and to carry out the other provisions of this act.

Report of Committee on Preservation of Wild Life of State.

In addition to an oral report by the chairman concerning the conservation work already accomplished in Ohio and other states, the Committee presented the following formal recommendations. The recommendations were adopted by the Academy, and the Committee continued under the changed name suggested: Committee on State Parks and Conservation.

The Committee on Preservation of Wild Life of State would recommend:

(1) That the present Committee be continued as a Committee on State Parks and Conservation, to study the various problems involved and to report a matured plan for further action by the Academy.

(2) That all members co-operate in listing suitable tracts for use as state parks, bird reserves, and reservations for the permanent preservation of areas possessing scenic, geologic, or biologic interest.

(3) That the committee proceed to secure co-operation with existing organizations in the preservation of natural conditions in the state forests, game refuges, state controlled tracts, and other areas where such co-operation is possible.

HERBERT OSBORN,
J. ERNEST CARMAN,
FRANCIS H. HERRICK,
C. G. SHATZER,
E. N. TRANSEAU,
MAYNARD M. METCALF,
Committee.

Report of Committee on Election of Fellows.

The following report of the Committee on Election of Fellows was accepted and ordered filed:

March 25, 1921.

To the Ohio Academy of Science:

The method of work of the Committee on the Election of Fellows has been as follows:

(1) Through the preliminary announcement of this meeting, the entire membership of the Academy was given the opportunity to make nominations for fellowship. A single nomination was received.

(2) Copies of the membership list were mailed by the Secretary to the eleven members of the joint committee to be checked as nominating ballots. Nine ballots were returned. Five members received three ballots each, four received two ballots, and thirty-four received one ballot.

(3) A meeting was held in Cleveland on the evening of March 24th, at which seven members of the joint committee were present, two were represented by duly authorized proxies, two were absent without representation.

After careful consideration and discussion, seventeen members received the necessary nine votes and were declared elected to fellowship in the Academy. The newly elected fellows will be personally notified, and the list will appear in the Proceedings.

In addition to the constitutional specification of "productive scientific work" as a condition for fellowship, the committee has been guided by the following principles, which it recommends as a general policy for future action:

(1) Members should not be elected to fellowship in the Academy until one year, at least, after election to membership.

(2) Resident members should not be elected to fellowship who are not showing an active interest in the work of the Academy.

This year's committee, like that of last year, took the ground that its action should be conservative. It is probable that good candidates for fellowship have been passed over; it will be the duty of future committees to correct these omissions.

Respectfully submitted,

EDWARD L. RICE, *Secretary.*,

For the Committee.

The list of members elected to fellowship is as follows:

G. F. ARPS	WM. E. HENDERSON
H. H. M. BOWMAN	J. S. HOUSER
E. LUCY BRAUN	JAMES ERNEST KINDRED
HAROLD E. BURTT	SIDNEY ISAAC KORNHAUSER
DWIGHT M. DELONG	FLORENCE MATEER
CARL DRAKE	H. C. OBERHOLSER
WM. LLOYD EVANS	PAUL B. SEARS
EMERY R. HAYHURST	VICTOR STERKI
B. W. WELLS	

Election of Officers.

The following officers and committee members for 1921-'22 were elected by the ballot of the Academy:

President—Professor R. C. OSBURN, Ohio State University, Columbus.

Vice-Presidents:

Zoology—Dr. J. E. KINDRED, Western Reserve University, Cleveland.

Botany—Professor E. N. TRANSEAU, Ohio State University, Columbus.

Geology—Professor J. E. HYDE, Western Reserve University, Cleveland.

Physics—Professor W. G. HORMELL, Ohio Wesleyan University, Delaware.

Medical Sciences—Professor F. C. WAITE, Western Reserve University, Cleveland.

Psychology—Professor RUDOLPH PINTNER, Ohio State University, Columbus.

(Professor Pintner later resigned the Vice-Presidency, owing to removal from the state, and was appointed by the Executive Committee to fill the vacancy.)

Secretary—Professor E. L. RICE, Ohio Wesleyan University, Delaware.

Treasurer—Dr. A. E. WALLER, Ohio State University, Columbus.

Elective Members of Executive Committee—Mr. W. H. ALEXANDER, U. S. Weather Bureau, Columbus; Professor L. B. WALTON, Kenyon College, Gambier.

Member of Publication Committee—Professor L. G. WESTGATE, Ohio Wesleyan University, Delaware.

Trustee of Research Fund—Dr. T. C. MENDENHALL, Ravenna.

Member of Library Committee—Professor W. C. MILLS, Ohio State University, Columbus.

Representatives on Editorial Board of Ohio Journal of Science:

Zoology—Professor R. A. BUDINGTON, Oberlin College, Oberlin.

Botany—Professor BRUCE FINK, Miami University, Oxford.

Geology—Professor G. D. HUBBARD, Oberlin College, Oberlin.

Physics—Professor S. J. M. ALLEN, University of Cincinnati, Cincinnati.

Medical Sciences—Professor F. C. WAITE, Western Reserve University, Cleveland.

Psychology—Professor H. A. ATKINS, Western Reserve University, Cleveland.

Election of Members.

The Membership Committee reported eleven names for election to membership; thirty-six additional names, previously approved by the Executive Committee and marked with (*) in the following list, were presented for ratification. All were elected, as follows:

- *AINSLIE, GEO. G.; Entomology; U. S. Entomological Laboratory, R. D. 9, Knoxville, Tenn.
- ALTAFER, L. B.; Chemistry; 7013 Clinton Ave., Cleveland.
- *BEAN, RAYMOND JACKSON; Physiology, Embryology; Biological Laboratory, Western Reserve University, Cleveland.
- *CHASE, SAMUEL WOOD, Zoology; 1353 E. 9th St., Cleveland.
- *CHASSELL, LAURA M., Psychology; Dept. of Psychology, Ohio State University, Columbus.
- *CLAYTON, EDWARD E.; Botany; Botany and Zoology Bldg., Ohio State University, Columbus.
- *DEVEREAUX, W. C.; Meteorology; Weather Bureau Office, Cincinnati.
- *DOBBINS, RAYMOND A.; Botany, Entomology; Dept. of Botany, Ohio State University, Columbus.
- *DOCKERAY, F. C.; Psychology; Ohio Wesleyan University, Delaware.
- *EMERY, E. H.; Meteorology; 829 Society for Savings Bldg., Cleveland.
- *FRIEDLANDER, MAE; Bacteriology, Biology; 343 Carroll St., Akron.
- *GODDARD, HENRY H.; Psychology, Sociology; 1638 Granville St., Columbus.
- *HARTLEY, EDWIN A.; Entomology; Dept. of Zoology and Entomology, Ohio State University, Columbus.
- *HAYHURST, EMERY R.; Medical Sciences; Dept. of Public Health and Sanitation, Ohio State University, Columbus.
- HILLS, MYRA E.; Psychology; 2066 E. 100th St., Cleveland.
- *JONES, J. W. L.; Psychology; Heidelberg University, Tiffin.
- *KNOUFF, RALPH A.; Medical Sciences; Ohio State University, Columbus.
- *LUCKEY, BERTHA M.; Psychology; Board of Education, Cleveland.
- *MANSON, EDMUND S., JR.; Astronomy, Physics, Mathematics; Ohio State University, Columbus.
- *MARSHALL, HELEN; Psychology; Ohio State University, Columbus.
- MARTIN, JOHN R.; Physics; Dept. of Physics, Case School of Applied Science, Cleveland.
- MATHER, KIRTLEY F.; Geology; Denison University, Granville.
- MOORE, DWIGHT M.; Botany; Granville.
- *MORSE, PAUL FRANKLIN; Geology; Asst. State Geologist, Jackson, Miss.
- *MOXOM, WALTER J.; Meteorology, Physics, Psychology; U. S. Weather Bureau Office, Dayton.
- *MURCHISON, CARL; Psychology; The Tallawanda, Oxford.

- *MYERS, GARRY C.; Psychology; Cleveland School of Education, Cleveland.
NIEHAUS, WM. E.; Zoology, Geology; Berea.
*OLIN, OSCAR E.; Psychology, Sociology; University of Akron, Akron.
*PATTEN, BRADLEY M.; Zoology, especially Embryology; 1353 E. Ninth St., Cleveland.
*PATTON, LEROY; Geology; Muskingum College, New Concord.
*REA, PAUL M.; Natural History Sciences, especially Zoology; The Cleveland Museum of Natural History, Cleveland.
RILEY, C. L.; Biology, Geology; 1219 Logan Ave., N. W., Canton.
*ROOTS, YALE K.; Physics; 412 N. Walnut St., Wooster.
ROSS, HERBERT W.; Chemistry, Geology; West Technical High School, Cleveland.
*SAYRE, JASPER D.; Botany; Dept. of Botany, Ohio State University, Columbus.
*SKAGGS, ERNEST B.; Psychology; 23 S. Union St., Delaware.
SMITH, ELLA THEA; Botany, Zoology; P. O. Box 7, Salem.
SMITH, ERNEST RICE; Geology, Paleontology; 130 Woodland Ave., Oberlin.
*STONE, JULIUS F., General Science, Grandview, Columbus.
*STRAUSBAUGH, P. D.; Botany, Microchemistry as applied to Plant Physiology; Burbank Road, R. F. D. 10, Wooster.
TIPPIE, WILLIAM A.; Physics; 2145 W. 100th St., Cleveland.
*WATSON, A. C.; Psychology; Marietta College, Marietta.
*WEBB, ROBERT FULTON; Geology; Dept. of Geology, Ohio State University, Columbus.
*WILLIAMS, R. D.; Philosophy, Psychology; Dept. of Philosophy, Ohio State University, Columbus.
*WURDACK, MARY E.; Botany; 29 Twelfth Ave., Columbus.
*YOUNG, HERMAN H.; Psychology, Educational Research; 235 Chapel Place, Youngstown.

Report of Committee on Necrology.

The following report of the Committee on Necrology was adopted by the Academy and ordered filed.

THOMAS PIWONKA.

September 10, 1854—May 9, 1920.

I first met Thomas Piwonka on the field excursion of the Academy for geology in May, 1919. The failing sight and frailty of age prevented him from participating in full, and he carefully withheld himself from much of the trip that he might not in any way impede the progress of the party. This thought for others was characteristic.

This was less than a year before his death. I saw him but six or eight times in the interval, but these meetings brought us together on the Cleveland shale outcrops of Big Creek which he had often searched for Devonian fish, in his own study and in my laboratory. There are

few men that it is possible to know on so short an acquaintance, yet due to a common interest in fossils. I may, I believe, fairly claim to have attained a certain intimacy with him.

It began when he modestly offered to go with me and show me, if I cared to have him, the localities where Dr. Clark, of Berea, had been most successful in his search for fossil fish. "If I cared!" To me, it is an opportunity forever lost that I was able to visit only one locality with this man who had been the intimate companion of Dr. Clark, the indefatigable collector, and Edward Claypole, the elucidator, of the Cleveland shale fish.

With the same modesty, almost with depreciation lest he might seem to intrude himself, he invited me to look over his small collection of fossils from the Cleveland district. When he learned that Western Reserve University possessed almost nothing from the Cleveland shale, he offered me anything of his from that formation "which might be worth having;" the University gratefully received it all. After his death, Mrs. Piwonka, at his request offered the remainder of the collection to the University, "such portion as might be thought worth having." The whole collection is not large, but contains much material from the Cleveland and Sandusky regions, all carefully marked as to locality, all valuable, particularly that from the Cleveland shale which yields material only on long careful search. Some of the material is unique. In earlier years, he had been equally generous with his findings, and the collections of both the United States Geological Survey and of the Dominion Geological Survey of Canada, have been enriched at his hands; in the days when Dr. Clark combed all Cleveland fish-producing localities twice yearly, an occasional choice specimen was obtain by him from Mr. Piwonka, which must since have lodged either in the British Museum or the American Museum of Natural History.

Before his death, he donated to the Department of Geology of Western Reserve University a generous sum of money to defray expenses of members of the department in making extensive field trips or elaborate collections. The donation was unsolicited, and was made with the firm assertion that he did not do it in any effort to perpetuate his name (indeed, he rather insisted that his name be left out of it); that though fortune had not been lavish with him, yet she had not been unkind, perhaps kinder than to most individuals engaged in University work, and he wished to defray a part of the expense that they are frequently put to in the prosecution of their interests. This sum has already been of service, and will be of yet more service, in the recovery of the last fish and amphibian remains that can possibly be obtained from the famous old Linton Coal-Measures locality of eastern Ohio.

Mr. Piwonka was born in New York City of Bohemian stock. He was valedictorian of his class from Central High School, Cleveland. His interest in natural science was first aroused by S. G. Williams, then a teacher in Central High School (who later became Professor of Education in Cornell University, and whose collection forms the bulk of the paleontological collection of Western Reserve University). After

graduation, Mr. Piwonka acted as secretary to the superintendent of schools for several years, during which time he found time to prepare himself for admission to the bar in 1876. His life-work was law, but in spare moments he was a naturalist with particular interest in geology, botany and microscopy. His passing removes one more (very few are left) of that generation of men interested in the natural history of their locality, with the collector's keen instinct, to which paleontology is profoundly indebted. With them is passing a phase of our culture.

J. E. HYDE, *Committee.*

Report of Committee on Resolutions.

The following resolutions were presented by the Committee on Resolutions and adopted by the Academy:

(1) The Academy wishes to thank the Local Committee, the officers of Western Reserve University and Case School of Applied Science for their efforts in making the Thirty-first Annual Meeting of the Ohio Academy of Science a success.

(2) The Academy wishes to express its appreciation of the continued interest and financial support given to the research work of this Academy by Mr. Emerson McMillin.

(3) The Academy wishes to express to Professor Charles A. Kofoid, of the University of California, its thanks for the special lecture on "Hookworm and Human Efficiency."

(4) The Academy wishes to thank again Professor E. L. Rice for his efficient services as Secretary of this Academy.

C. G. SHATZER.

RAYMOND C. OSBURN.

WALTER H. BUCHER.

Amendment of Constitution.

ART. V, SECTION 3. *Election of Fellows.* Amended to read: Fellows shall be elected by joint action of the Executive Committee and the Vice-Presidents, from nominations endorsed by two fellows of the Academy. Such nominations shall be accompanied by documentary evidence of the candidate's scientific achievements upon which the nomination is based. Approval by three-fourths of this joint committee shall be necessary to election.

Amendment of By-Laws.

CHAP. III, SECTION 5. *Nomination of Fellows.* New section, to read: A suitable blank for nomination of fellows shall be supplied by the Secretary and shall be mailed to each member of the Academy at least once each year.

CHAP. IV, SECTION 2. *Nominations.* Amended to read: The Academy shall elect by ballot a Nominating Committee, consisting of one representative from each regularly organized Section of the Academy, who shall nominate a candidate for each office, including elective members of the Executive Committee, the Publication Committee, and the Trustees of the Research Fund. Additional nominations may be made by any member of the Academy.

Proposed Amendment of Constitution.

The following amended form of Art. VI, Section 1, was proposed by the Executive Committee for action at the next annual meeting: *Annual Meeting.* The date and place of the Annual Meeting shall be fixed by Executive Committee, subject to such instructions as shall be determined by the Academy at the preceding annual meeting, and shall be announced by circular at least thirty days before the meeting. The details of the daily sessions of each meeting shall be arranged by the Program Committee and announced in the official program immediately before the meeting.

The Committee on Legislation was also instructed to make such revision of the Constitution and By-Laws as may be necessitated in case the Legislature shall pass the proposed bill providing for State support of the Academy, this instruction to be interpreted as notice of proposed amendment, enabling definitive action at the next annual meeting.

Certificate of Election to Fellowship.

The Secretary was instructed to prepare a suitable certificate to be presented to each newly elected fellow in the Academy.

Appeal from University of Debreczen.

An appeal from the Director of the Geographical Institute of the Royal University of Debreczen (Hungary), under date of December 7, 1920, for "books, used clothes, and even little sums of money" for the desperately needy students of the department, was read by the Secretary. No action was taken by the Academy beyond thus calling the matter to the attention of the individual members.

Scientific Sessions.

The complete scientific program of the meeting follows:

PRESIDENTIAL ADDRESS.

Thunderstorms; especially those of Ohio..... W. H. ALEXANDER

PUBLIC LECTURES.

Hookworm and human efficiency..... CHARLES A. KOFOID
Scientific work at the Ohio Bureau of Juvenile Research.... HENRY H. GODDARD

PAPERS.

1. The new Cleveland Museum of Natural History. (15 min.)... PAUL M. REA
2. The state park situation in Ohio. (15 min.)..... J. ERNEST CARMAN
3. Chronological view of men of science. (7 min.)..... J. A. CULLER
4. A peculiar case of stature inheritance. (3 min.)..... A. B. PLOWMAN
5. A differential sensitivity theory of time and space and its bearing on evolution. (7 min.)..... L. B. WALTON
6. The relation of the biologist to public health administration. (15 min.),
A. B. PLOWMAN
7. The function of the striae and the origin of bilateral symmetry in the euglenoids. (15 min.) (Lantern)..... L. B. WALTON
8. The geographical distribution of the genera of Opalinidae. (20 min.),
(Opaque projection)..... MAYNARD M. METCALF
9. Hemiptera of the Adirondacks. (10 min.) (Lantern).... HERBERT OSBORN
10. Collecting in southern Florida. (10 min.)..... HERBERT OSBORN
11. Some studies in Hessian fly emergence. (10 min.) (Lantern) T. H. PARKS
12. Notes on the habits and life history of *Galeatus peckhami* Ashm.
(5 min.) (Lantern)..... CARL J. DRAKE
13. A new Ambrosia beetle: notes on the work of *Xyloterinus politus* Say.
(6 min.) (Lantern)..... CARL J. DRAKE
14. Phylogeny and distribution of the genus *Libellula*. (20 min.) (Lantern),
CLARENCE H. KENNEDY
15. Aids in teaching elementary cytology. (By title)..... Z. P. METCALF
16. The cytology of the sea-side earwig *Anisolabis*. (15 min.).. S. I. KORNHAUSER
17. Copulation in *Planaria maculata*. (5 min.)..... R. A. BUDINGTON
18. On the regulative capacity of the neural tube. (15 min.) (Lantern),
H. L. WIEMAN
19. The musculature of the head and throat of the *Chimaera ogilvyi*. (15 min.)
(Lantern)..... MAE FREIDLANDER
20. New models of the development of the heart in the chick. (20 min.),
BRADLEY M. PATTEN
21. Some features of the morphology of the kidney of *Necturus*. (20 min.),
S. W. CHASE
22. Orientation in the cat. (5 min.)..... FRANCIS H. HERRICK
23. Diet of a captive mole. (5 min.)..... E. L. MOSELEY
24. Additions to the birds of Ohio. (10 min.)..... LYNDA JONES
25. Phagocytoses and clotting in the perivisceral fluid of *Arbacia*. (10 min.),
J. E. KINDRED

26. Further observations as to effect of thyroid substance on plant protoplasm. (5 min.).....R. A. BUDINGTON
27. The origin and development of the prairie in North America. (40 min.),
(Lantern).....H. C. SAMPSON
28. The significance of native vegetation in crop production. (35 min.),
(Lantern).....A. E. WALLER
29. Energy relations of an acre of corn. (5 min.).....E. N. TRANSEAU
30. Some energy relations of aquatic life and their significance. (10 min.),
L. H. TIFFANY
31. Contributions to the genetics and cytology of parthenogenetic *Taraxaca*.
(5 min.).....PAUL B. SEARS
32. Reversal of the sexual state in the Japanese hop. (10 min.)...J. H. SCHAFFNER
33. The occurrence and abundance of certain algae in Lake Erie. (10 min.),
MALCOLM E. STICKNEY
34. The census of flowering plants on certain small islands of Lake Erie.
(8 min.).....MALCOLM E. STICKNEY
35. Causes and consequences of the irregularities in the glacial border in
the Ohio Valley. (30 min. (Lantern)).....G. FREDERICK WRIGHT
36. Explorations in Eastern Bolivia. (20 min.).....K. F. MATHER
37. Some sub-surface rock channels filled with glacial material. (15 min.),
J. ERNEST CARMAN
38. A fault-zone breccia in the Bass Island series. (10 min.)...J. ERNEST CARMAN
39. A disconformable contact at the base of the Sylvania sandstone. (5 min.)
J. ERNEST CARMAN
40. The Ordovician and Silurian seas of American Arctic and Subarctic
regions and the relation of their faunas to contemporaneous seas of
European areas. (20 min.).....AUG. F. FOERSTE
41. Some coastal geology of southern Florida. (20 min.).....G. F. LAMB
42. An interpretation of some Ohio geology. (12 min.).....G. F. LAMB
43. Richmond Ostracoda of especial interest. (10 min.).....W. H. SHIDELER
44. Additions to our knowledge of the Arnheim. (10 min.)...W. H. SHIDELER
45. A Pliocene brackish water fauna near Alexander, La. (10 min.)...E. R. SMITH
46. A modification of Hobbs's method of teaching interpretation of geologic
maps. (10 min.).....E. R. SMITH
47. An embryonic volcano in Adams County, Ohio. (15 min.),
WALTER H. BUCHER
48. Local geology of Cleveland from an economic standpoint. (25 min.),
(Lantern).....FRANK R. VAN HORN
49. The reopening and the end of the Linton (Ohio) Coal-measures, fossil-
amphibian locality. (10 min.).....J. E. HYDE
50. The fauna of the Berea Grit; a recurrent Bedford fauna, and its bearing
on the age of the Bedford. (15 min.).....J. E. HYDE
51. Some psychology applied to Americanization. (20 min.)...GARRY C. MYERS
52. Scientific direction of childhood—America's greatest social and political
responsibility. (30 min.).....HERMAN H. YOUNG
53. Reliability of survey methods in individual diagnosis. (20 min.),
FLORENCE FITZGERALD
54. Limiting factors in human behavior. (5 min.).....A. P. WISE
55. Waste of mental ability in our school system. (10 min.)...HELEN MARSHALL
56. (a) Some studies in progress in the Cleveland School of Education.
(b) Some data on learning curves. (30 min.).....GARRY C. MYERS
57. College men in the penitentiary. (20 min.).....CARL MURCHISON

58. A preliminary report on retroactive inhibition (with particular reference to two conditions). (20 min.).....E. B. SKAGGS
59. The measurement of psychological effects of fatigue and low oxygen. (20 min. (Lantern)).....C. F. DOCKERAY
60. Discussion of the legal status of psychology in Ohio State.
Discussion led by H. AUSTIN AIKINS

DEMONSTRATIONS.

- (a) Chromosomal complexes of *Anisolabis*.....S. I. KORNHAUSER
- (b) Geographic distribution maps for the Opalinidae and their hosts,
MAYNARD M. METCALF
- (c) New models of development of the heart in the chick.BRADLEY M. PATTEN
- (d) Chart and data relating to an interesting case of stature inheritance,
A. B. PLOWMAN
- (e) Multiple ova in Graafian follicles of cat.....EDWARD L. RICE
- (f) Sulphur dioxide injury to vegetation.....A. E. WALLER
- (g) Illustrations of euglenoids.....L. B. WALTON